

MBI-0032.ST25.txt
SEQUENCE LISTING

<110> Broun, Pierre

<120> Method for Modifying a Biosynthetic Pathway

<130> MBI-0032

<160> 8

<170> PatentIn version 3.0

<210> 1

<211> 1239

<212> DNA

<213> *Arabidopsis thaliana*

<220>

<221> CDS

<222> (6) .. (1091)

<223> G993

MBI-0032.ST25.txt

aaa gct gag atc gtg gat atg ttg agg aaa cac act tac gcc gat gag Lys Ala Glu Ile Val Asp Met Leu Arg Lys His Thr Tyr Ala Asp Glu 145 150 155	482
ttt gag cag agt aga cg ^g aag ttt gtt aac ggc gac gga aaa cgc tct Phe Glu Gln Ser Arg Arg Lys Phe Val Asn Gly Asp Gly Lys Arg Ser 160 165 170 175	530
ggg ttg gag acg gc ^g ac ^g tac gga aac gac gct gtt ttg aga gc ^g cgt Gly Leu Glu Thr Ala Thr Tyr Gly Asn Asp Ala Val Leu Arg Ala Arg 180 185 190	578
gag gtt ttg ttc gag aag act gtt acg cc ^g agc gac gtc ggg aag ctg Glu Val Leu Phe Glu Lys Thr Val Thr Pro Ser Asp Val Gly Lys Leu 195 200 205	626
aac cgt tta gtg ata cc ^g aaa caa cac gc ^g gag aag cat ttt cc ^g tta Asn Arg Leu Val Ile Pro Lys Gln His Ala Glu Lys His Phe Pro Leu 210 215 220	674
cc ^g gc ^g atg acg ac ^g gc ^g atg ggg atg aat cc ^g tct cc ^g ac ^g aaa gg ^c Pro Ala Met Thr Thr Ala Met Gly Met Asn Pro Ser Pro Thr Lys Gly 225 230 235	722
gtt ttg att aac ttg gaa gat aga aca ggg aaa gtg tgg cc ^g ttc cgt Val Leu Ile Asn Leu Glu Asp Arg Thr Gly Lys Val Trp Arg Phe Arg 240 245 250 255	770
tac agt tac tgg aac agc agt caa agt tac gtg ttg acc aag gg ^c tgg Tyr Ser Tyr Trp Asn Ser Ser Gln Ser Tyr Val Leu Thr Lys Gly Trp 260 265 270	818
agc cc ^g ttc gtt aaa gag aag aat ctt cga gcc ggt gat gtg gtt tgt Ser Arg Phe Val Lys Glu Lys Asn Leu Arg Ala Gly Asp Val Val Cys 275 280 285	866
ttc gag aga tca acc gga cca gac cc ^g caa ttg tat atc cac tgg aaa Phe Glu Arg Ser Thr Gly Pro Asp Arg Gln Leu Tyr Ile His Trp Lys 290 295 300	914
gtc cc ^g tct agt cc ^g gtt cag act gtg gtt agg cta ttc gga gtc aac Val Arg Ser Ser Pro Val Gln Thr Val Val Arg Leu Phe Gly Val Asn 305 310 315	962
att ttc aat gtg agt aac gag aaa cca aac gac gtc gca gta gag tgt Ile Phe Asn Val Ser Asn Glu Lys Pro Asn Asp Val Ala Val Glu Cys 320 325 330 335	1010
gtt ggc aag aag aga tct cc ^g gaa gat gat ttg ttt tc ^g tta ggg tgt Val Gly Lys Lys Arg Ser Arg Glu Asp Asp Leu Phe Ser Leu Gly Cys 340 345 350	1058
tcc aag aag cag gc ^g att atc aac atc ttg tga caaattcttt tt ^{tttt} tggtt Ser Lys Lys Gln Ala Ile Ile Asn Ile Leu 355 360	1111
tttttcttca atttgtttctt ccttttcaa tattttgtat tgaaatgaca agttgtaaat	1171

MBI-0032.ST25.txt

taggacaaga caagaaaaaa tgacaactag acaaaatagt ttttgtttaa aaaaaaaaaa 1231
aaaaaaaaa 1239

<210> 2
<211> 361
<212> PRT
<213> Arabidopsis thaliana

<400> 2

Met Glu Tyr Ser Cys Val Asp Asp Ser Ser Thr Thr Ser Glu Ser Leu
1 5 10 15

Ser Ile Ser Thr Thr Pro Lys Pro Thr Thr Thr Glu Lys Lys Leu
20 25 30

Ser Ser Pro Pro Ala Thr Ser Met Arg Leu Tyr Arg Met Gly Ser Gly
35 40 45

Gly Ser Ser Val Val Leu Asp Ser Glu Asn Gly Val Glu Thr Glu Ser
50 55 60

Arg Lys Leu Pro Ser Ser Lys Tyr Lys Gly Val Val Pro Gln Pro Asn
65 70 75 80

Gly Arg Trp Gly Ala Gln Ile Tyr Glu Lys His Gln Arg Val Trp Leu
85 90 95

Gly Thr Phe Asn Glu Glu Glu Ala Ala Ser Ser Tyr Asp Ile Ala
100 105 110

Val Arg Arg Phe Arg Gly Arg Asp Ala Val Thr Asn Phe Lys Ser Gln
115 120 125

Val Asp Gly Asn Asp Ala Glu Ser Ala Phe Leu Asp Ala His Ser Lys
130 135 140

Ala Glu Ile Val Asp Met Leu Arg Lys His Thr Tyr Ala Asp Glu Phe
145 150 155 160

Glu Gln Ser Arg Arg Lys Phe Val Asn Gly Asp Gly Lys Arg Ser Gly
165 170 175

Leu Glu Thr Ala Thr Tyr Gly Asn Asp Ala Val Leu Arg Ala Arg Glu
180 185 190

MBI-0032.ST25.txt

Val Leu Phe Glu Lys Thr Val Thr Pro Ser Asp Val Gly Lys Leu Asn
195 200 205

Arg Leu Val Ile Pro Lys Gln His Ala Glu Lys His Phe Pro Leu Pro
210 215 220

Ala Met Thr Thr Ala Met Gly Met Asn Pro Ser Pro Thr Lys Gly Val
225 230 235 240

Leu Ile Asn Leu Glu Asp Arg Thr Gly Lys Val Trp Arg Phe Arg Tyr
245 250 255

Ser Tyr Trp Asn Ser Ser Gln Ser Tyr Val Leu Thr Lys Gly Trp Ser
260 265 270

Arg Phe Val Lys Glu Lys Asn Leu Arg Ala Gly Asp Val Val Cys Phe
275 280 285

Glu Arg Ser Thr Gly Pro Asp Arg Gln Leu Tyr Ile His Trp Lys Val
290 295 300

Arg Ser Ser Pro Val Gln Thr Val Val Arg Leu Phe Gly Val Asn Ile
305 310 315 320

Phe Asn Val Ser Asn Glu Lys Pro Asn Asp Val Ala Val Glu Cys Val
325 330 335

Gly Lys Lys Arg Ser Arg Glu Asp Asp Leu Phe Ser Leu Gly Cys Ser
340 345 350

Lys Lys Gln Ala Ile Ile Asn Ile Leu
355 360

<210> 3
<211> 1226
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (111)..(989)
<223> G1845

<400> 3
aagacataat tttctctgtt ttcccttagctc tctccctctca aattcttcca ttgctctctg 60

MBI-0032.ST25.txt

ttttggcaaa tcgtgaactg ccacgtcttt aaggcatcg tgaagcaaag atg gac Phe Asp Glu Glu Leu Asn Leu Cys Ile Thr Lys Gly Lys Asn Val Asp 5 10 15	116
ttt gac gag gag cta aat ctt tgt att acg aaa ggt aaa aat gtt gat His Ser Phe Gly Gly Glu Ala Ser Ser Thr Ser Pro Arg Ser Met Lys 20 25 30	164
aaa atg aag agt cct agt cgt cct aaa ccc tat ttc caa tcc tct tct Lys Met Lys Ser Pro Ser Arg Pro Lys Pro Tyr Phe Gln Ser Ser Ser 35 40 45 50	212
tct cct tat tcg tta gag gct ttc cct ttt tct ctc gat cca aca ctt Ser Pro Tyr Ser Leu Glu Ala Phe Pro Phe Ser Leu Asp Pro Thr Leu 55 60 65	260
cag aat cag caa caa ctc gga tca tac gtt ccg gta ctt gag caa Gln Asn Gln Gln Leu Gly Ser Tyr Val Pro Val Leu Glu Gln 70 75 80	308
cga caa gac ccg aca atg caa ggc cag aag caa atg atc tcc ttt agt Arg Gln Asp Pro Thr Met Gln Gly Gln Lys Gln Met Ile Ser Phe Ser 85 90 95	356
cct caa caa caa cag cag cag cag tat atg gcc cag tac tgg agt Pro Gln Gln Gln Gln Gln Gln Tyr Met Ala Gln Tyr Trp Ser 100 105 110	404
gac aca ttg aat ctg agt cca aga gga aga atg atg atg atg atg agc Asp Thr Leu Asn Leu Ser Pro Arg Gly Arg Met Met Met Met Met Ser 115 120 125 130	452
caa gaa gct gtt caa cct tac atc gca acg aag ctg tac aga gga gtg Gln Glu Ala Val Gln Pro Tyr Ile Ala Thr Lys Leu Tyr Arg Gly Val 135 140 145	500
aga caa cgt caa tgg gga aaa tgg gtc gca gag atc cgt aag cca cga Arg Gln Arg Gln Trp Gly Lys Trp Val Ala Glu Ile Arg Lys Pro Arg 150 155 160	548
agc agg gca cgt ctt tgg ctt ggt acc ttt gat aca gct gaa gaa gct Ser Arg Ala Arg Leu Trp Leu Gly Thr Phe Asp Thr Ala Glu Glu Ala 165 170 175	596
gcc atg gcc tac gac cgc caa gcc ttc aaa tta cga ggc cac agc gca Ala Met Ala Tyr Asp Arg Gln Ala Phe Lys Leu Arg Gly His Ser Ala 180 185 190	644
aca ctg aat ttc ccg gag cat ttt gtg aat aag gaa agc gag ctg cat Thr Leu Asn Phe Pro Glu His Phe Val Asn Lys Glu Ser Glu Leu His 195 200 205 210	692
gat tca aac tcg tcg gat cag aaa gaa cct gaa acg cca cag cca agc Asp Ser Asn Ser Ser Asp Gln Lys Glu Pro Glu Thr Pro Gln Pro Ser 215 220 225	740

MBI-0032.ST25.txt

gag gtt aac ttg gag agc aag gaa cta ccg gtg att gat gtt ggg aga 836
 Glu Val Asn Leu Glu Ser Lys Glu Leu Pro Val Ile Asp Val Gly Arg
 230 235 240

gag gaa ggt atg gct gag gca tgg tac aat gcc att aca tcg gga tgg 884
 Glu Glu Gly Met Ala Glu Ala Trp Tyr Asn Ala Ile Thr Ser Gly Trp
 245 250 255

ggt cct gaa agt cct ctt tgg gat gat ttg gat agt tct cat cag ttt 932
 Gly Pro Glu Ser Pro Leu Trp Asp Asp Leu Asp Ser Ser His Gln Phe
 260 265 270

tca tca gaa agc tca tct tct cct ctc tct tgt cct atg agg cct 980
 Ser Ser Glu Ser Ser Ser Pro Leu Ser Cys Pro Met Arg Pro
 275 280 285 290

ttc ttt tga aaaagtttat aaacccacat tgtgtttag gttatagttt 1029
 Phe Phe

agggttatgc tcattggcat ttggatggag gcaatttttgc tgatctccca ttccaccaca 1089
 tatcagtcat tatatgtgtc taccttttct ctgtatttct atcattatca ttgtttttat 1149
 tatgtgtctg tatgtgtttc cctattgcta catacataga tgcctcttt gttcaaaaaaa 1209
 aaaaaaaaaa aaaaaaaaa 1226

<210> 4
 <211> 292
 <212> PRT
 <213> Arabidopsis thaliana

<400> 4

Met Asp Phe Asp Glu Glu Leu Asn Leu Cys Ile Thr Lys Gly Lys Asn
 1 5 10 15

Val Asp His Ser Phe Gly Gly Glu Ala Ser Ser Thr Ser Pro Arg Ser
 20 25 30

Met Lys Lys Met Lys Ser Pro Ser Arg Pro Lys Pro Tyr Phe Gln Ser
 35 40 45

Ser Ser Ser Pro Tyr Ser Leu Glu Ala Phe Pro Phe Ser Leu Asp Pro
 50 55 60

Thr Leu Gln Asn Gln Gln Gln Leu Gly Ser Tyr Val Pro Val Leu
 65 70 75 80

Glu Gln Arg Gln Asp Pro Thr Met Gln Gly Gln Lys Gln Met Ile Ser
 85 90 95

Phe Ser Pro Gln Gln Gln Gln Gln Gln Gln Tyr Met Ala Gln Tyr
100 105 110

Trp Ser Asp Thr Leu Asn Leu Ser Pro Arg Gly Arg Met Met Met Met
115 120 125

Met Ser Gln Glu Ala Val Gln Pro Tyr Ile Ala Thr Lys Leu Tyr Arg
130 135 140

Gly Val Arg Gln Arg Gln Trp Gly Lys Trp Val Ala Glu Ile Arg Lys
145 150 155 160

Pro Arg Ser Arg Ala Arg Leu Trp Leu Gly Thr Phe Asp Thr Ala Glu
165 170 175

Glu Ala Ala Met Ala Tyr Asp Arg Gln Ala Phe Lys Leu Arg Gly His
180 185 190

Ser Ala Thr Leu Asn Phe Pro Glu His Phe Val Asn Lys Glu Ser Glu
195 200 205

Leu His Asp Ser Asn Ser Ser Asp Gln Lys Glu Pro Glu Thr Pro Gln
210 215 220

Pro Ser Glu Val Asn Leu Glu Ser Lys Glu Leu Pro Val Ile Asp Val
225 230 235 240

Gly Arg Glu Glu Gly Met Ala Glu Ala Trp Tyr Asn Ala Ile Thr Ser
245 250 255

Gly Trp Gly Pro Glu Ser Pro Leu Trp Asp Asp Leu Asp Ser Ser His
260 265 270

Gln Phe Ser Ser Glu Ser Ser Ser Ser Pro Leu Ser Cys Pro Met
275 280 285

Arg Pro Phe Phe
290

<210> 5
<211> 845
<212> DNA
<213> Arabidopsis thaliana

MBI-0032.ST25.txt

<220>
<221> CDS
<222> (89)..(673)
<223> G1386

<400>	5					
aattttatcccttcata	aatcttccca	ccaaaaatta	actcttcgt	tcacactaa	60	
tccctttaa	aagaaaatat	cccaatta	atg gaa cgt	gac tgc	cgg aga	112
			Met Glu Arg	Asp Asp Cys	Arg Arg	
		1		5		
ttt cag gac tcg ccg	cg	cag acg acg	gag aga aga	gtg aaa tat	aaa	160
Phe Gln Asp Ser Pro	Ala	Gln Thr Thr	Glu Arg Arg	Val Lys Tyr	Lys	
10		15		20		
cca aag aag aaa aga	gcc	aaa gat gat	gat gag aaa	gtt gtt tcg		208
Pro Lys Lys Lys	Arg Ala	Lys Asp Asp	Asp Asp Glu	Lys Val Val	Ser	
25		30		35		40
aag cat cca aat ttt	cga	ggt gtc	aga atg aga	caa tgg gga	aaa tgg	256
Lys His Pro Asn Phe	Arg Gly Val	Arg Met	Arg Gln Trp	Gly Lys Trp		
	45		50		55	
gtg tcc gaa atc aga	gag cca	aaa aag	aaa tca aga	atc tgg ctc	ggt	304
Val Ser Glu Ile Arg	Glu Pro Lys	Lys Lys	Ser Arg Ile	Trp Leu	Gly	
60		65		70		
act ttc tcc acg	gag atg	gct gct	cac gac	gtg gca	gct	352
Thr Phe Ser Thr Ala	Glu Met	Ala Ala	Arg Ala	His Asp Val	Ala Ala	
75		80		85		
tta gcc atc aaa	ggc ggt	tct gca	cat ctc	aac ttc	ccg gag	390
Leu Ala Ile Lys	Gly Ser	Ala His	Leu Asn	Phe Pro	Glu Leu	
90		95		100		
tat cac ctc aga	cca gct	agt gcc	gac cct	aaa gac	atc caa	448
Tyr His Leu Pro	Arg Pro	Ala Ser	Ala Asp	Pro Lys	Asp Ile	
105		110		115		120
gcc gcc gca	gct gca	gcc gct	gtg gcc	att gac	atg gat	496
Ala Ala Ala	Ala Ala	Ala Ala	Val Ala	Ile Asp	Met Asp	
	125		130		135	
acg tct tcg	ccg tcg	cca tct	ccc aca	gtt acg	gaa acg	544
Thr Ser Ser Pro	Ser Pro	Ser Pro	Thr Val	Thr Glu	Thr Ser	
140		145		150		
gct atg ata	gca ctc	tcc gac	gac gcg	ttc tcc	gat ctt	592
Ala Met Ile	Ala Leu	Ser Asp	Asp Ala	Phe Ser	Asp Leu	
155		160		165		
ttg ctc aac	gtg aac	cat aac	atc gat	ggc ttc	tgg gac	640
Leu Leu Asn	Val Asn	His Asn	Ile Asp	Gly Phe	Trp Asp	
170		175		180		
tat gaa gaa ccc	tcc ctc	tct caa	agt tac	tag aaactcaaaa	ctatgtcggt	693
Tyr Glu Glu Pro	Phe Leu	Ser Gln	Ser Tyr			

MBI-0032.ST25.txt

185	190	
tttgtatgta tttttgtcat gtgaccattt tttgacgtcg aaaatcaccc ggataatcca		
aattgtatga tttattaatg gttgatgatt ttcttgtgt ggaacaatgt gtatgatacg		
taatcaaaag ttcaaaaaaa aaataaaaaaa aa		
<210> 6		
<211> 194		
<212> PRT		
<213> Arabidopsis thaliana		
<400> 6		
Met Glu Arg Asp Asp Cys Arg Arg Phe Gln Asp Ser Pro Ala Gln Thr		
1	5	10 15
Thr Glu Arg Arg Val Lys Tyr Lys Pro Lys Lys Lys Arg Ala Lys Asp		
20	25	30
Asp Asp Asp Glu Lys Val Val Ser Lys His Pro Asn Phe Arg Gly Val		
35	40	45
Arg Met Arg Gln Trp Gly Lys Trp Val Ser Glu Ile Arg Glu Pro Lys		
50	55	60
Lys Lys Ser Arg Ile Trp Leu Gly Thr Phe Ser Thr Ala Glu Met Ala		
65	70	75 80
Ala Arg Ala His Asp Val Ala Ala Leu Ala Ile Lys Gly Gly Ser Ala		
85	90	95
His Leu Asn Phe Pro Glu Leu Ala Tyr His Leu Pro Arg Pro Ala Ser		
100	105	110
Ala Asp Pro Lys Asp Ile Gln Ala Ala Ala Ala Ala Ala Ala		
115	120	125
Val Ala Ile Asp Met Asp Val Glu Thr Ser Ser Pro Ser Pro Ser Pro		
130	135	140
Thr Val Thr Glu Thr Ser Ser Pro Ala Met Ile Ala Leu Ser Asp Asp		
145	150	155 160
Ala Phe Ser Asp Leu Pro Asp Leu Leu Leu Asn Val Asn His Asn Ile		
165	170	175

MBI-0032.ST25.txt

Asp Gly Phe Trp Asp Ser Phe Pro Tyr Glu Glu Pro Phe Leu Ser Gln
 180 185 190

Ser Tyr

```
<210> 7
<211> 891
<212> DNA
<213> Arabidopsis thaliana
```

<220>
<221> CDS
<222> (59) .. (646)
<223> G872

<400> 7
 ccggaaacag aatccaaattc aaccaaaccg aatcgaaccg aaccggagtt tttatcca 58
 atg gtg aag caa gcg atg aag gaa gag gag aag aag aga aac acg gcg 106
 Met Val Lys Gln Ala Met Lys Glu Glu Lys Lys Arg Asn Thr Ala
 1 5 10 15
 atg cag tca aag tac aaa gga gtg agg aag agg aaa tgg gga aaa tgg 154
 Met Gln Ser Lys Tyr Lys Gly Val Arg Lys Arg Lys Trp Gly Lys Trp
 20 25 30
 gta tcg gag atc aga ctt cca cac agc aga gaa cga att tgg tta ggc 202
 Val Ser Glu Ile Arg Leu Pro His Ser Arg Glu Arg Ile Trp Leu Gly
 35 40 45
 tct tac gac act ccc gag aag gcg gcg cgt gct ttc gac gcc gct caa 250
 Ser Tyr Asp Thr Pro Glu Lys Ala Ala Arg Ala Phe Asp Ala Ala Gln
 50 55 60
 ttt tgt ctc cgc ggc ggc gat gct aat ttc aat ttc cct aat aat cca 298
 Phe Cys Leu Arg Gly Gly Asp Ala Asn Phe Asn Phe Pro Asn Asn Pro
 65 70 75 80
 ccg tcg atc tcc gta gaa aag tcg ttg acg cct ccg gag att cag gaa 346
 Pro Ser Ile Ser Val Glu Lys Ser Leu Thr Pro Pro Glu Ile Gln Glu
 85 90 95
 gct gct gct aga ttc gct aac aca ttc caa gac att gtc aag gga gaa 394
 Ala Ala Ala Arg Phe Ala Asn Thr Phe Gln Asp Ile Val Lys Gly Glu
 100 105 110
 gaa gaa tcg ggt tta gta ccc gga tcc gag atc cga cca gag tat tot cct 442
 Glu Glu Ser Gly Leu Val Pro Gly Ser Glu Ile Arg Pro Glu Ser Pro
 115 120 125
 tct aca tct gca tct gtt gct aca tcg acg gtg gat tat gat ttt tcg 490
 Ser Thr Ser Ala Ser Val Ala Thr Ser Thr Val Asp Tyr Asp Phe Ser
 130 135 140

MBI-0032.ST25.txt

ttt ttg gat ttg ctt ccg atg aat ttc ggg ttt gat tcc ttc tcc gac Phe Leu Asp Leu Leu Pro Met Asn Phe Gly Phe Asp Ser Phe Ser Asp 145 150 155 160	538
gac ttc tct ggc ttc tcc ggt ggt gat cga ttt aca gag att tta ccc Asp Phe Ser Gly Phe Ser Gly Gly Asp Arg Phe Thr Glu Ile Leu Pro 165 170 175	586
atc gaa gat tac gga gga gag agt tta tta gat gaa tct ttg att ctt Ile Glu Asp Tyr Gly Gly Ser Leu Leu Asp Glu Ser Leu Ile Leu 180 185 190	634
tgg gat ttt tga attcccaaac ataatatttt ttttagagcga actgtgagat Trp Asp Phe 195	686
tttccttgg a gtcatggaga aatctggaga tttttttaa cacggagctc caatgaccgg ggaatttctt tcgttcgga tccgaatttg atgtggatca tattcacacc tatattttt cattttttg ttgtaaagaa aaatcgata agattctagt aataaatgtt aaaagtccat ttcattaaaa aaaaaaaaaaaa aaaaaa	746 806 866 891
<210> 8 <211> 195 <212> PRT <213> Arabidopsis thaliana	
<400> 8	
Met Val Lys Gln Ala Met Lys Glu Glu Glu Lys Lys Arg Asn Thr Ala 1 5 10 15	
Met Gln Ser Lys Tyr Lys Gly Val Arg Lys Arg Lys Trp Gly Lys Trp 20 25 30	
Val Ser Glu Ile Arg Leu Pro His Ser Arg Glu Arg Ile Trp Leu Gly 35 40 45	
Ser Tyr Asp Thr Pro Glu Lys Ala Ala Arg Ala Phe Asp Ala Ala Gln 50 55 60	
Phe Cys Leu Arg Gly Gly Asp Ala Asn Phe Asn Phe Pro Asn Asn Pro 65 70 75 80	
Pro Ser Ile Ser Val Glu Lys Ser Leu Thr Pro Pro Glu Ile Gln Glu 85 90 95	
Ala Ala Ala Arg Phe Ala Asn Thr Phe Gln Asp Ile Val Lys Gly Glu 100 105 110	

MBI-0032.ST25.txt

Glu Glu Ser Gly Leu Val Pro Gly Ser Glu Ile Arg Pro Glu Ser Pro
115 120 125 .

Ser Thr Ser Ala Ser Val Ala Thr Ser Thr Val Asp Tyr Asp Phe Ser
130 135 140

Phe Leu Asp Leu Leu Pro Met Asn Phe Gly Phe Asp Ser Phe Ser Asp
145 150 155 160

Asp Phe Ser Gly Phe Ser Gly Gly Asp Arg Phe Thr Glu Ile Leu Pro
165 170 175

Ile Glu Asp Tyr Gly Gly Glu Ser Leu Leu Asp Glu Ser Leu Ile Leu
180 185 190

Trp Asp Phe
195